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Effective Enterprise System Implementation: Aligning Information System Components with Organizational Strategy

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Introduction

One important decision enterprise system (ES) implementation project managers face, is the decision of which components from a suite of components, offered by an ES vendor, to incorporate into the information system portfolio and whether those components should be customized. The standards employed by an ES component often do not match the organization's needs. To close this gap, system components are customized, or alternatively, the organizational processes are altered.

Modifications of the software system are referred to as a *specialization* of an ES component. This includes the customization of an ES component, 3rd party add-ons, as well as using custom developed component instead of the ES component. While a specialization of a standard ES solution may lead to more fitting data definitions and processes it also negates some of the benefits anticipated from a standard solution (Haines and Goodhue, 1999). The implementation of specializations is costly in itself, but more important specializations can lead to increased maintenance and integration costs (Davenport, 2000). Therefore specializations have to be carefully considered and trade-offs have to be taken into account. The question of whether and how to modify a standard software solution to meet an organization's needs has been discussed in several trade press articles (Stedman, 1998; Reda, 1998; Gill, 1999), but is lacking a more thorough investigation into the factors associated with ES component specialization. This dissertation takes a closer look at this issue, focusing in particular on the link between business strategy and the specialization of an ES component.

Conceptual Framework and Research Question

The results of an exploratory study suggest that strategic importance of an ES component plays an important role in the degree and the approach of its specialization. Based on the strategic alignment model (Henderson and Venkatraman, 1993) and the findings from the exploratory study (Haines and Goodhue, 1999) an initial research model (see figure 1) is proposed.

The purpose of this dissertation is to refine and validate this research model based on empirical

observations. This dissertation addresses in particular the following specific research questions:

- What factors impact the approach and degree of specialization of an IS component?
- How and why is the approach and degree of specialization of an ES component related to the strategic importance of the corresponding business component?

The answer to these two questions has the potential to provide researchers as well as IS managers with useful insights in one of the crucial and most costly aspects of the implementation and development of ES.

Methodology

This cross-sectional study involves a series of multiple case studies of 6-8 organizations in various industries. For each case several interviews with appropriate representatives from IS as well as the user areas, such as accounting or logistics, will be conducted. In addition an analysis of the system configuration and other relevant documents will be included in the data collection. The researcher believes that it is important to observe implementation strategies across a number of organizations to capture the variety of strategies and factors, as well as the varying business impacts. A small number of focused interviews and document analyses are expected to lead to good case descriptions and be sufficient to capture the phenomena under investigation. If the planned data collection turns out to not be sufficient, case study research leaves the option to include additional means of data collection to reach theoretical saturation (Eisenhardt, 1989; Yin, 1994).

The basic unit of analysis is the business function with its strategy towards ES component implementation, but also analysis regarding aspects of the entire organization will be included.

This study has an exploratory nature. Additional factors, as well as refinements are expected to be included in the initial research model. The research model is intended to guide the development of hypotheses that can be applied in subsequent studies. The business impacts of ES implementations depend on a complex network of factors and therefore require a sufficient understanding of the context of each individual ES implementation. ES are a contemporary phenomenon and there has been very little rigorous research focusing on the implications of business strategy on the specialization of IS components. It appears necessary to gain a better understanding of the

phenomenon first, before instruments for a quantitative study are developed. According to the criteria mentioned in Benbasat et al. (Benbasat et al., 1989) and Yin (Yin, 1994) a case research design is appropriate for the purpose of this study.

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Figure 1. Research Model

